

SLOAN VALVE COMPANY

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June 4, 1999

Ms. Mary Ann Ross
Food & Drug Administration
Dockets Management Branch
99N-0438 HFA-305
5630 Fishers Lane - Room 1061
Rockville, Maryland 20825

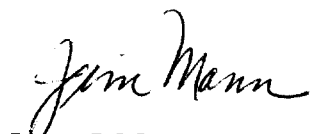
Dear Ms. Ross:

Attached is a study we conducted in the past year which may give you some added perspective on our mutual goal to get food handlers to wash their hands more frequently. We are also gathering handwash temperature information, but it is currently not in a form, which is easy to report on. The bottom line is that tests show that 100°F water is a deterrent to frequent handwashing.

We have some additional research in progress together with the National Environmental Health Association, which will be available sometime in July.

I look forward to discussing this with you on my return from Europe at the end of this month.

Sincerely,



James I. Mann
HealthMinder Handwash Systems

sw

Enclosure

99N-0438

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FINAL REPORT

Global Hygiene Systems



**A Qualitative Exploration
of the
Foodservice Industry's
Handwash/Food Safety Needs**



September 1998



**Sloan Valve Research
Zvia Shever
Rick Nortier**

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- Discussion Guides

BACKGROUND/OBJECTIVES

Sloan Valve Company is interested in helping solve the foodservice industry's safety issues as they relate to handwashing. Specifically, Sloan is exploring combining our water engineering skills together with our sensor technology in creating intuitive, cost effective hands-free solutions for away-from-home kitchens.

In order to meet such goals, a qualitative research project was commissioned with the following specific objectives in mind:

- To uncover respondent thoughts on what they believe the reasons are for food service staff to wash their hands as well as why they do not, with comparisons to previous research responses;
- To determine what the target market believes would be the ideal hand washing system for restaurant kitchens, a design which would most meet their needs or the needs of the appropriate people;
- And, how best to implement this ideal system once designed.

METHODOLOGY

Three (3) focus groups were conducted in Chicago in September of 1998 and were organized in the following manner:

- (1) Architects who engage in restaurant design;
- (2) Fast Food Managers; and
- (3) Chefs.

Participants queried generally boasted several years of experience in their respective businesses. For example, most of the architects surveyed had ten (10) to thirty (30) years experience in residential and/or commercial architecture. Fast food managers' experience ranged from nine (9) to twenty-five (25) years in that business, while participating chefs maintained six (6) to thirty (30) years experience in restaurants and the food industry.

While the architects' answers differed somewhat from the fast food managers' and the chefs' answers, the general discussion was organized in the following manner:

- * Why employees should wash their hands
- * What are the excuses for not washing
- * What is being done to promote frequent hand-washing
- * Designing the ideal hand-washing system
- * Implementing the system

Focus groups are qualitative in nature and are conducted among a small number of respondents. The findings, therefore, should be viewed as indicative rather than definitive, and they should not be viewed as representative of any universe. The moderator uses a list of subject matters to be covered and stimulates a free and flexible conversation among group members in order to give everyone an opportunity for spontaneous expressions of feelings (see Appendix for Moderator's guide).

The groups, which were held at professional focus group facilities, were audio-taped and video-taped. They were also viewed through a one-way mirror. Participants were paid for their cooperation.

SUMMARY OF FINDINGS

WHY FOOD SERVICE STAFF SHOULD WASH THEIR HANDS

While the answer to this question is most likely common knowledge and has been already responded to via previous client research, participants were asked the same question more as a warm up to the topic and to compare their thoughts with the previous research. For the most part, respondents comments paralleled the previous response list (see Appendix), with the most frequently noted reason being to prevent the spread of germs:

"You don't want to make people sick."

"We all carry germs on our hands."

"So they don't spread diseases."

"Sneezing on our hands."

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Other frequent reasons given were it's the law/to avoid lawsuits, as well as to prevent cross contamination among foods:

"It's mandatory."

"We're a large company and we don't want to have a lawsuit."

"We go from raw meats to cooked meats to bring to someone."

"Cross contamination is one of the biggest problems in our industry."

Interestingly, the architects interviewed were less likely to name health concerns, but more often discussed the need for hand washing in terms of customer satisfaction/opinion or general food quality:

"General cleanliness...so they don't have dirt on their hands or under their nails...so customers don't see."

"Customers like the idea, especially when they see signs in the washrooms."

"Quality control."

"You've got someone handling garlic over here and whipped cream delight over there. You better have some transition of leaving that garlic in its place."

WHY EMPLOYEES DO NOT WASH THEIR HANDS

Again, when asked for typical or likely excuses for kitchen staff not washing hands, participant responses were very similar to the pre-group client list (see Appendix). The most frequent responses given by these respondents were timing/in a hurry, the wash basin is not conveniently located, or employees do not think of it/feel there is no need to wash. A number of respondents particularly stated differing cultures/upbringing as a reason for not seeing the need and/or not being in the habit of frequent hand washing.

Some of their representative comments follow:

Timing

"Have to get the [food] out."

"Timing is critical. When you're doing 400 or 500 dinners on a Friday or Saturday night, you really don't have time in between."

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"Can't tell your customer, 'Your salmon is 15 minutes late because I had to wash my hands 3 times.'"

Inconvenient

"Not convenient. It's not right in front of them."

"Usually the wash sink is located in such a remote area that's not a major part of the kitchen. It's inconvenient to get to."

No need

"Sometimes employees don't see the reason for it; they just don't get it.."

"Management probably doesn't care because it's one of those invisible things - can't see the stuff on your hands."

Culture/upbringing

"Upbringing [It] depends on where we grew up on the world; clean kitchens are viewed differently by different cultures."

"Some people just aren't raised like that." [water is scarce]

WHAT IS BEING DONE TO PROMOTE HAND WASHING

When the chefs and fast food managers were asked what they or their workplace does to either promote or increase hand-washing, they often stated that the best way to inform employees of the importance of frequent hand-washing is through initial employee training:

"Part of the training...We have a whole segment of their training on safety and sanitation."

"Corporate training films that are specific to our chains."

"When [we] train a new employee for two-week training, that's one of the rules. Local college teachers who teach sanitation classes come and train. We enforce from the beginning."

"When people are hired, we let them view a videotape, but [the videos] are old and outdated. People find them humorous."

Many had also indicated that they try to instill the importance of hand washing in their staff by repetition of requests and/or a barrage of posters and other informative material which serve as constant reminders:

"We have posters up everywhere reminding them to wash their hands."

"Constant, 'in-your-face' posters and that in the kitchen. There are illustrations and constant reminders. The education has to be constant."

"Yell at them all the time because if you tell them once, they don't think and won't do it."

"Just go through repetition. We keep asking them when they leave the washroom, 'Did you wash your hands?'"

Two respondents' companies hire an inspector to come and evaluate their kitchens and provide them with feedback on their sanitation:

"We have our own inspector who comes once a month and inspects. Once they wrote us up for not having soap at one sink."

"We have inspections called ASI (American Sanitation Inspection), an independent company who comes to check on us. We hire them to come and check up on us."

It should be noted here that some of chefs interviewed suggested that the Health Department is now a resource for them whereas in the past it seemed to work more "against" than "with" them:

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"Before they used to just come in and say, 'This is wrong. This is wrong.' Now they come and give us ideas on what to implement."

"They are more hand in hand than on top of you now. Instead of just saying, 'Get these things fixed,' they will give you addresses and more information."

"The local Health Department has videos and educational resources."

Other thoughts on how respondents promote frequent hand washing can be seen in their individual remarks below:

"...by example. I am always [washing my hands] when I change jobs, after handling money..."

"We have someone in charge of making sure the sink area is clean, that the soap is there, towels are there."

"I've gone into the bathroom a couple of times to see if the sink is wet or dry."

"We added a second sink and set it up with antibacterial soap."

When respondents were queried as to how the importance of frequent hand-washing could be elevated or stressed, many stated that enforcement of such policies should be a priority. In addition, participating fast food managers and chefs indicated that the education of employees is significant.

ARCHITECTS AND KITCHEN DESIGN

When probed as to the process of designing a kitchen, the architects interviewed alluded to two major points. First, they told the moderator that they typically hire a kitchen planning specialist to aid in their design of a restaurant's kitchen, an area which is viewed as requiring very specific expertise:

"Almost every project we work on we use a kitchen planner. It's important. They are professionals who don't sell anything, but do this day in and day out and understand more thoroughly how everything fits together."

Second, most indicated that the sink/hand wash area typically is not one of the elements to which much thought is devoted. In fact, most of these respondents said that their clients often have the attitude of "it's required by law, so just put it somewhere":

"Wherever you can fit it in."

"We would try to put sinks in one of the major flight paths, but inevitably, it ends up getting kind of shoved to the end. You have other things you need to get in there."

"Some owners would not want to have to deal with it at all, but it's required by law."

DESIGNING A SOLUTION - THE PERFECT SYSTEM

It was quite clear to all participants that there was, in fact, a problem concerning the infrequent hand-washing occurring in the food industry, a problem which needs rectified.

In an effort to provide a solution to this problem, respondents were given an opportunity to describe their ideal hand-washing system. In all three of the groups, a “hands free” system was suggested on an unaided basis, and sometimes even prior to the direct questioning by the moderator. This hands free system was discussed in terms of an “electronic eye” turning the water on and off as well as ensuring touchless access to the soap and paper towels:

“An automatic [system] would also help the timing - it takes less time to wash, [therefore], they might do it more often.”

“It would be great to have self-off sinks in kitchens. It may help motivate them to wash more often.”

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“An ultraviolet turn on and shut off.”

“You shouldn’t have to touch the handles.”

“Paper towel dispensers that aren’t on rolls where you would have to touch.”

Perhaps the second most offered up characteristic of the ideal hand-washing system is some type of enforcement measure or detection mechanism which is built into the washing facility. Participants indicated that the system must include a type of signal to supervisors (or employees) as to whether the system is being used properly or whether it is being used at all. This could include a beep signal, use counter or printouts, or even an ultraviolet light for checking to see if employees hands are indeed clean.

Some specific suggestions are as follows:

"Bells sounding if [you] don't wash, or some way of showing if [you] have washed or not...some kind of evaporating dye, perhaps."

"Some kind of light that can actually see if hands are clean...[you] can actually see yourself washing the germs off."

"Some kind of print-out telling managers how many times employees washed their hands."

"Monitor the [hand-washing] somehow, so you know if the [employee] didn't wash three times."

"A detector that goes off if [you] didn't clean...[the system] should police for us."

"[It] beeps if you take your hands off before the time is up."

"A dye that comes out that you have to rinse off that tells you when your hands are clean."

Another idea which was offered by respondents was for the system to work like a car wash or dishwasher cycle. Such a system would not only speed up the hand washing process, but would ensure that no steps are missed:

"Something that won't let your hands away until they are clean."

"If the system were set up like a car wash where it puts out soapy water for 3 seconds and then rinse water. Then if you have soapy hands, you have to keep rubbing until rinse water comes."

"Like a car wash. Everything all in one place."

"Make cost-effective so you can have a bunch and have them everywhere."

"If you are an owner and you are faced with the challenge of running low on funds, the [question] becomes 'should I buy this extra sink or spend the money somewhere else?'"

During these discussions on the ideal system, many expressed a concern over the maintenance of the system should it get too complicated. It was therefore suggested by some to make it as simplistic and easily fixable as possible, with most stressing the need for the relatively low maintenance aspect of a system. Some ideas include:

"The beauty of Moen faucets is that anyone can fix them. You just go to Home Depot and pick up the replacement part."

"Minimal maintenance."

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"So maintenance-free that a manager can fix and maintain."

"It has to be easy to re-fill."

"Need easy fixing..." "Need proven reliability."

"Manual override in case it breaks down. You don't want to be without a sink."

"Local availability of parts."

Some also stressed the fact that this system would have to contain a large enough wash basin to contain the splashing, yet allow an employee to "scrub up to his elbows." A few asserted that a long and/or flexible neck would achieve this purpose as well.

Although it was said that just having this ideal system in place is likely to result in more frequent hand washing, it was further suggested that two other strategies could be used to encourage hand washing even

more. One of those was some sort of scare tactics to enlighten employees on the importance of hand washing:

"Show them training material and go over bacteria. I think they need to show more graphic things and what's happened when people have gotten sick."

"Have to get pretty graphic sometimes. Like the videos they show in driver's education. Make them see what really could happen."

"Something memorable that will leave an indelible mark on them."

The other point was that of incentives, meaning positive incentives for washing hands as well as negatives ones for neglecting to wash frequently:

"Dock their paychecks if they don't."

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"If there were fines associated, it would get done."

"A list in the bathroom with everyone's name on it and every time wash their hands they get a star, or a bonus, or a free meal."

"Incentives to wash. Make it fun."

IMPLEMENTING A SOLUTION

Respondents indicated that they would need to convince the owners or corporate office that the current system does not work and that the new system is likely to save the company money in the long run by enabling quicker production of quality products and possibly preventing costly lawsuits:

"Public safety is the issue; that's the argument I would use to convince the owner [to invest in one]."

"Show that the old system isn't working or works poorly."

"Sixty minutes less a day on hand washing could translate to \$3,000 or \$5,000 in savings."

"What's \$1,000 for a new system compared to a huge law suit."

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"Have to show them it's cost effective as far as not hampering food production."

"If it helps in cutting down diseases and cross contamination and all that, I don't think an owner would mind spending the extra buck."

Those interviewed further agreed that restaurant associations may aide in stressing the importance of frequent hand-washing and may provide helpful information on what system to purchase. Several respondents also suggested restaurant and trade shows, in addition to various trade publications (*Restaurant and Hotel Design*; *Architectural Record*; and *Architecture*), as a means of assisting owners and managers in implementing such a system.

Most other comments responding to the question of implementation were quite varied and are reported below:

"If it's reasonably priced, it will be an easier sell."

"May help when trying to get new employees. Show them a clean, up to date operation. It's a way to attract good people."

"If it's durable and lasts, it will save money in the long run."

"If customers see it and know you have this system, it may help business."

When asked who would be responsible for installing such a system, participants' answers again varied. Some participants, usually chefs, did not know what manufacturer or supplier could or would install the hand-washing facility. Architects generally answered in terms of sink manufacturers. Most participants, however, had heard of the Sloan Valve Company upon aiding by the moderator.

Prospective suppliers or manufacturers suggested included the following:

"Moen faucets or something."

"Restaurant equipment supply company."

"Computer-related company like Hewlett-Packard."

"Eagle (brand)."

"Americlean."

"Bradley."

"Bobert."

"LK."

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Furthermore, when asked for the anticipated cost of such an ideal system designed in the groups, suggested prices ranged from \$75 to \$1,000, with the majority believing \$250 to be both likely and acceptable.

CONCLUSIONS AND RECOMMENDATIONS

- There is a very clear need for a new hand washing system in restaurant kitchens. What is more, the majority of respondents had suggested, often on an unaided basis, the desire for a touchless system which they believe is likely to result in more frequent hand washing by kitchen staff.
- In addition to the touchless aspect, respondents' ideal design would include temperature controls, a "car wash" type of system whereby everything is included in one process (wash, sanitize, rinse), and some detection aid to ensure employees washed their hands.
- Most respondents indicated that they would not find the new system such a hard sell to the restaurant owners or corporate offices but they would need only to convince them that the current system is not working, yet the new system is likely to save them time and money in the long run.

APPENDIX

Discussion Guides:

- **Architects**
- **Chefs & Food Service Managers**

DISCUSSION GUIDE: Architects

I. GENERAL INTRODUCTION

Name

Title

Type Restaurants design: free standing, hotel, franchise?

Square footage, seating capacity

Percentage or volume of renovation verses new construction

Years of experience in commercial kitchens

Typical # of dedicated hand wash sinks?

II. DEFINE MISSION AND OVERVIEW OF SESSION

III. PROBLEM

A. **WHY THEY SHOULD:** Have participants put a dot on the top three

B. **WHY THEY DON'T:** Have participants put a dot on the top three

IV. DESIGN THE PERFECT SYSTEM (Discuss each component/summarize on board)

INTRODUCTION: If we were designing the perfect hand wash station to increase employee hand washing, what would it look like. Discuss the ideal "hand station" in terms of each of the following product elements:

A. DESIGN: SINK/FAUCET

Type product Manual or electronic, foot operated, brand

Number of sinks

Size

Style

Location (convenience, accessibility)

Work Flow

Soap dispenser: timed, counted electronic

Towels: times counted electronic

Water temperature, pressure, timed

Specific brands; companies

Other attributes: durability, flexibility, US,

How much time spent on design wash station

How much consideration to sink

B. PLUMBING/INSTALLATION ISSUES

What type of particular plumbing constraints/issues should be considered

Specific requirements for installation?

Problems or issues that contractors may have

Different problems for new construction verses renovation

Any water related issues or electrical issues?

Do you have any solutions to various issues?

C. MONITORING/DOCUMENTING

Do you design any products for monitoring or documenting handwashing

Tracking devices, buzzers or other

What type of products could you add? Counters, Cameras, Electronics

Any thought to mechanical system for reminding or increasing handwash

Is there any design for enforcing hand washing?

Other ideas in monitoring, documenting enforcing to increase hand wash

DISCUSSION GUIDE: Architects

D. MAINTENANCE/ ON-GOING SERVICE

Concerns or issues with on-going maintenance? What areas need help?
Do you design systems that require on going service?
How can we improve or correct design for easier maintenance/service?
Problems, areas need to be corrected
Your concerns, your involvement
Durability and up-keep of product

V. IMPLEMENTATION (Discuss each component/summarize on board)

INTRODUCTION: OK now we have a pretty good idea of the perfect hand wash station and the components. How do we get this product in commercial kitchens? How do we go about implementing this "ideal" product? (DISCUSS each element as it relates to getting the product to market)

A. DESIGN/REVIEW PROCESS

Who initiates, whose involved
difference renovation/new construction
Explain involvement with plan review, process, problems, changes
Who is the major decision maker on new products? How do new products get recommended?
How do you find out about new products/concepts? Who initiates new products
What stage should new products be introduced? Who important to reach?

B. CORPORATE POLICY

Current corporate policy and issues to consider which dictate design
Are most kitchens the same, how do they differ, why do differ, trends
Aware of hand wash policies and how effects product design
Your involvement in hand wash policy changes, updates
What needs to be improved/changed in policies to implement new products
Corporate guidelines for how often kitchens renovated, updated

C. GOVERNMENT REGULATIONS

What regulations do you need to consider in kitchen design
How do you stay current on changes and updates? (HACCP, FDA)
Different for various types of kitchens: fastfood, restaurants,hotels
Any issues and problems that regulation causes
Do you work with the health department and how do they influence this product
Solutions or items to be resolved

D. DISTRIBUTION CHANNEL

Specific suppliers or companies who could make this ideal product
Any current suppliers who could distribute to commercial kitchens?
Service Product?
Who would you expect could develop and implement this type product?
Could one supplier/ company do it all?
What are key issues that would effect the distribution of product

E ATTITUDES/BEHAVIORS

Making the hand washing stations the focus of the kitchen?
Changes in attitudes and opinions about architects involvement in hand washing?
How can design influence food service staff to wash more frequently?
Other kitchen trends or new concepts that effect hand wash issue?

VI. ANY ISSUES OR CONCERNS IN THE AREA OF HAND WASH STATION WE DIDN'T DISCUSS

DISCUSSION GUIDE: Chefs/Managers

I. INTRODUCTION

Name

Title

Type Restaurant (ie hotel free standing)

Size of Facility: seating capacity/# employees

employees managed

DEDICATED HAND WASH SINKS

II. DEFINE MISSION AND OVERVIEW OF SESSION

III. PROBLEM

A. **WHY THEY SHOULD:** Have participants put a dot on the top three

B. **WHY THEY DON'T:** Have participants put a dot on the top three

IV. DESIGN THE PERFECT SYSTEM (Discuss each component/summarize on board)

INTRODUCTION:

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Location (convenience, accessibility)

Work Flow

Soap dispenser: timed, counted electronic

Towels: times counted electronic

Water temperature, pressure, timed

Specific brands; companies

Other attributes: durability, flexibility, US,

Any other issues/ ideas for sink design which could increase hand washing?

B. TRAINING/EDUCATION

Best way to inform-employees and-update on new items

What tools or aids(posters/signs) do use? Who creates? Changes? Ideas?

Your role and problems in training and education

Any consideration for formal verses informal; regular scheduled review sessions

How do handle language barrier and turnover

What would perfect training/education program need?

Any difference for different type restaurants

C. MONITORING/DOCUMENTING/ENFORCING

Who responsible, how do monitor?

Biggest problem in monitoring/enforcing

How can improve monitoring

What do you use to monitor? equipment, documents, cameras, counters, buzzers

How often should document, who should document

What type of documentation? What changes and improvements

Documentation issues and or concerns?

DISCUSSION GUIDE: Chefs/Managers

How do we design for enforcing hand washing? How should reprimand or reward?

Assistance from outside groups?

Do problems differ at beginning of day verses mid-day or end of day?

Assistance from outside groups?

Biggest problems and issues in this area; Solutions

D. MAINTENANCE/ ON-GOING SERVICE

Who maintains and who refills? Who should?

Concerns or issues with on-going maintenance? What areas need help?

Design or solutions for on-going service of equipment/supplies?

Your concerns, your involvement

Other maintenance issues to resolve?

V. IMPLEMENTATION (Discuss each component/summarize on board)

INTRODUCTION: OK now we have a pretty good idea of the perfect hand wash station and the components. How do we get this product in commercial kitchens? How do we go about implementing this "ideal" product? (DISCUSS each Element as it relates to getting the product to market)

A. DESIGN/REVIEW PROCESS

Who initiates, whose involved

Difference renovation/new construction

Explain involvement with PLAN REVIEW, process, problems, changes

Who is the major decision maker on new products? How do new products get recommended?

How do you find out about new products/concepts? Who initiates new products

What stage should new products be introduced? Who important to reach?

B. INTERNAL FACTORS

Current hand wash policy: problem, improvements, etc

Preparation; your involvement in hand wash policy, changes, updates

Other corporate requirements in kitchen that effect hand wash

People in organization involved in hand washing?

What changes and/or improvements organization could be made?

Customer involvement in hand wash

Procedure problems beginning of day, middle of day, end of day

Other internal issues that need to be improved to increase hand washing

C. EXTERNAL FACTORS

Outside groups effecting the kitchen? Health department? Government Regs(HACCP)?

How do you work with these organizations? Good relations?

How could you change this relationship? How could they help improve hand washing?

How do stay up to date with changes in regulations/requirements?

Is there a way to improve the update and awareness process?

How can these organizations help increase hand washing?

DISCUSSION GUIDE: Chefs/Managers

V. IMPLEMENTATION (Discuss each component/summarize on board) (cont)

D. DISTRIBUTION CHANNEL

Who should supply this ideal product? Why?

What suppliers could you see offering this product?

What concerns would you have about current suppliers implementing this program?

Other than current supplier, how would you find out about this type of product?

Recommendations for potential suppliers?

Key issues for suppliers to address?

Could one supplier provide all of these services?

E. ATTITUDES/BEHAVIOR

Best way to change some of staff's current attitudes about hand washing? Solutions, ideas

Is it possible to change staff behavior? How?

Can the importance of hand washing be elevated? How?

What are the biggest attitude/behavior issue a new product needs to resolve?

Are there other groups/ outside factors that could influence employees habits?

VI. ANY ISSUES OR CONCERNS IN THE AREA OF HAND WASH STATION WE DIDN'T DISCUSS

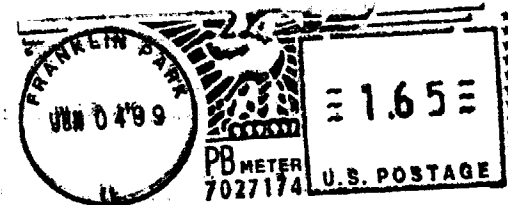
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